

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number
WO 2004/023459 A2

(51) International Patent Classification⁷: **G11B 7/00**

(21) International Application Number:
PCT/IB2003/003757

(22) International Filing Date: 22 August 2003 (22.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02292176.1 4 September 2002 (04.09.2002) EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]**;
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BUSCH, Christopher [DE/FR]**; 156 Boulevard Haussmann, F-75008 Paris

(FR). **BALISTRERI, Marcello [NL/FR]**; 156 Bd Haussmann, F-75008 PARIS (FR). **OPHEY, Willem [NL/FR]**; 156 Bd Haussmann, F-75008 PARIS (FR).

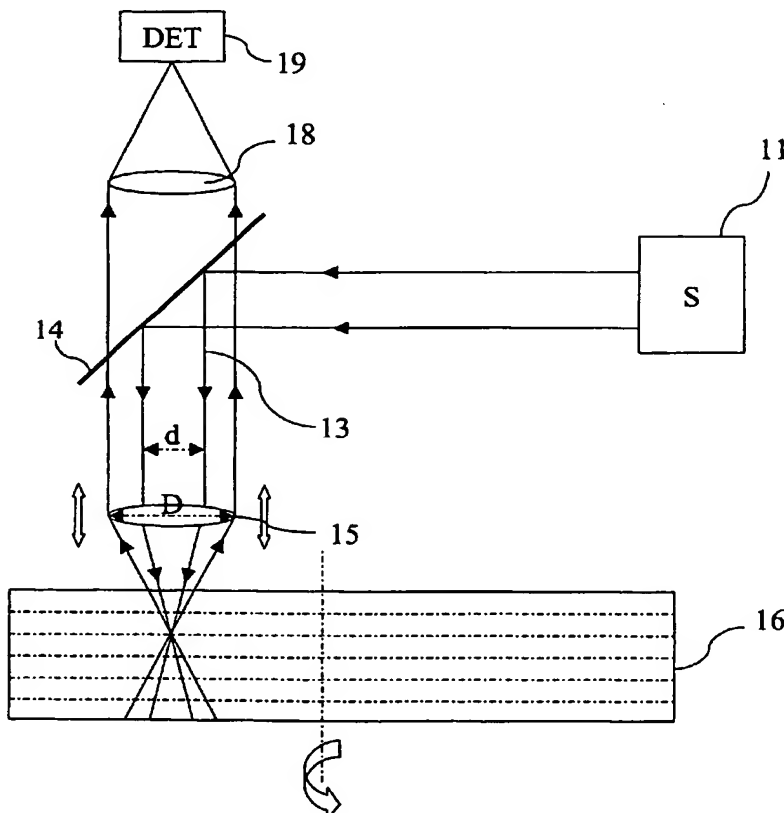
(74) Agent: **CHAFFRAIX, Jean**; Société Civile SPID, 156 Boulevard Haussmann, F-75008 Paris (FR).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

[Continued on next page]

(54) Title: SCANNING APPARATUS FOR FLUORESCENT MULTI-LAYER STORAGE.



(57) Abstract: The invention relates to a scanning apparatus for scanning information in an information carrier (16) comprising a plurality of layers for storing data on a material capable of generating an excited radiation when interacting with an exciting beam (13) produced by an exciting source (11). The scanning apparatus comprises an objective lens (15) for projecting the exciting beam in a layer of the carrier and collecting the excited radiation. The scanning apparatus also comprises a detector unit (19) for detecting the excited radiation collected on the objective lens. According to the invention, the exciting beam has a numerical aperture lower than the lens numerical aperture.



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *without international search report and to be republished upon receipt of that report*